REMARKS

This paper is being provided in response to the May 28, 2002 Office Action for the above-referenced application. In this response, applicants have amended claim 1 in order to more particularly point out and distinctly claim that which applicant deems to be the claimed invention. Applicants respectfully submit that the modifications to claim 1 are all supported by the originally filed application.

The rejection of claims 1-13 under 35 U.S.C. §112, second paragraph, as being indefinite, specifically for the use of the term "strip-like", which term only appears in independent claim 1, has been addressed by removing that term in connection with the claim amendments contained herein. Accordingly, applicants respectfully request that this rejection, as set forth in the Office Action, be withdrawn.

The rejection of claims 1-13 under 35 U.S.C. §103(a) as being unpatentable over Applicants admitted prior art (figures 8-11, hereinafter referred to as "APA") in view of Kitazawa et al (U.S. Patent No. 6,057,600, hereinafter referred to as "Kitazawa"), is hereby traversed and reconsideration thereof is respectfully requested. Applicants respectfully submit that claims 1-13, as amended herein, are patentably distinct over the cited references, whether taken alone or in any combination.

Independent claim 1, as amended herein, recites a RF package including a multilayered dielectric substrate on which first and second dielectric substrates are formed. The multilayered dielectric substrate has a cavity in the second dielectric substrate where a semiconductor element is to be mounted on the first dielectric substrate. There is a feed-through for connecting an inside and outside of the cavity having a coplanar line formed on the first dielectric substrate and an inner layer line formed on the

first dielectric substrate obtained by forming the second dielectric substrate on the coplanar line. The coplanar line and inner layer line share a signal conductor formed on said first dielectric substrate. There are metal members formed at a connection interface between the coplanar line and inner layer line on two sides of the signal conductor, and connect ground conductors of the coplanar line and the inner layer line on the first dielectric substrate to a top surface of the second dielectric substrate at an edge of the second dielectric. Claims 2-13 depend from independent claim 1, and recite additional patentable features over the cited prior art. Dependent claim 2 recites that there are ground conductors on the top of the first dielectric layer that have a fixed separation, and ground conductors on the second dielectric substrate that are connected by vias have identified positions. Dependent claim 3 recites a formula to determine the correct spacing of the connection interface and the center of on of the via holes. Dependent claims 4 and 7 recite a formula for determining the pitch of the vias in the direction of the signal. Dependent claim 5 recites a formula for the pitch of the vias perpendicular to the signal. Dependent claim 6 recites that a third ground conductor is formed on the bottom of the first dielectric and connected to the first ground. Dependent claim 8 recites that the metal members have ends on the signal conductor at the via locations. Dependent claim 9 recites that the metal members connect the ground layers at the interface. Dependent claim 10 recites that the metal members are posts. Dependent claim 11 recites that the metal members are semicircular electrodes. Dependent claim 12 recites that the metal members are metal plates. Dependent claim 13 recites that the dielectric substrates are co-fired ceramic.

The cited art of the APA discloses a RF package having two ceramic layers with a cavity that penetrates the top layer. There is a coplanar line with a signal line that extends under the top ceramic layer to the outside of the cavity. There are vias that connect the top ground layer to the coplanar lines. There is nothing in the APA with regard to making connections between the top ground layer and the coplanar lines at the interface where the coplanar lines are covered by the second ceramic layer.

The cited art of Kitazawa is used by the Office Action to show the missing feature of "metal members formed at a connection interface between the coplanar line and the inner layer", and discloses a high frequency device on an insulating board having a circuit on the first dielectric. The dielectric board has a first signal transmission line on its top surface and a second signal transmission line on its bottom surface, the first and second signal transmission lines overlapping each other over a position where the signal is transmitted through coupling of the first and second transmission lines. Applicants respectfully submit that this clearly means a contact via location, and that the signal line is not on a single layer, as is further indicated by figures 1, 9 and 10.

The cited reference of Kitazawa does not have an equivalent to the recited "inner line" of the present application, since, as shown in figure 1, 3, 4, 5, 8 and 10, the signal line 25a extends along the bottom dielectric only up to an overlap region with the conductive adhesive 29, and has no " *inner layer line ... obtained by forming said second dielectric substrate on said coplanar line, said coplanar line and said inner layer line sharing a signal conductor formed on the first dielectric substrate* ". Kitazawa can not

have an "inner line" since the comparable second dielectric layer (i.e., element 2 of figure 10) is never on the first dielectric layer (i.e., the insulating board 24 of figure 10) but is rather raised on the electrically conductive adhesive 29.

The signal line of Kitazawa (i.e., what the Office Action identifies as 25a when it is on the first dielectric 24) is formed from the IC 5 on top of the upper most dielectric layer, travels through the conductor 6 (i.e., the signal line when on the top layer) to the via 50 and down two layer to the bottom surface of the upper dielectric layer (which is never ON the lower dielectric layer) to become the signal line 8, then to the conductive adhesive 29 (which separates the upper from the lower dielectric) to the lower dielectric 24. Thus there is NO COPLANAR line under the upper dielectric. Further, the portions of the signal line not on the first dielectric (i.e., elements 6 and 8) do not have coplanar lines surrounding them, and thus fail to disclose the feature of "... *said coplanar line and said inner layer line sharing a signal conductor formed on the first dielectric substrate* ...", as recited in independent claim 1.

Applicants respectfully submit that even if the suggested combination of cited references were to be allowable, at least the combination of claimed features of "...*multilayered dielectric substrate having a cavity in the second dielectric substrate where a semiconductor element is to be mounted on the first dielectric substrate; a feed-through for connecting an inside and outside of said cavity and comprised of a coplanar line formed on said first dielectric substrate and an inner layer line formed on the first dielectric substrate obtained by forming said second dielectric substrate on said coplanar*

line, said coplanar line and said inner layer line sharing a signal conductor formed on the first dielectric substrate; and metal members formed at a connection interface between said coplanar line and said inner layer line on two sides of said signal conductor, and connecting ground conductors of the coplanar line and the inner layer line on the first dielectric substrate to a top surface of the second dielectric substrate at an edge of the second dielectric ...", still would not be present in the cited prior art, whether taken alone or in any combination. As noted above, the cited references in any combination fail to disclose at least the combination of features of having a coplanar line that exits a cavity with a signal line and has contacts to the ground layers that are located at the interface of the connection point where the lines exit the overlaying dielectric layer. The identified conductive material of the Kitazawa reference is an adhesive used to connect the various lines in the multilayer ceramic package to the circuit board 24, and do not connect to the top of the second board 41.

The dependent claims 2-13 are felt to be patentable at least as depending upon a base claim shown to be patentable over the suggested combination of references. For at least the above noted reasons, applicants respectfully request that this rejection, as set forth in the Office Action, be withdrawn.

Based on the above, applicant respectfully requests that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 617-951-6676.

Respectfully submitted,
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Clean copy of claims amended herein.

1. An RF package comprising:

a multilayered dielectric substrate on which first and second dielectric substrates are formed, said multilayered dielectric substrate having a cavity in the second dielectric substrate where a semiconductor element is to be mounted on the first dielectric substrate;

a feed-through for connecting an inside and outside of said cavity and comprised of a coplanar line formed on said first dielectric substrate and an inner layer line formed on the first dielectric substrate obtained by forming said second dielectric substrate on said coplanar line, said coplanar line and said inner layer line sharing a signal conductor formed on the first dielectric substrate; and

metal members formed at a connection interface between said coplanar line and said inner layer line on two sides of said signal conductor, and connecting ground conductors of the coplanar line and the inner layer line on the first dielectric substrate to a top surface of the second dielectric substrate at an edge of the second dielectric.